APPENDIX G -- PSAM

PROGRAM OF MENUS FOR CREATING SAM INPUT FILES

G-1.1 Purpose. PSAM is a series of menus, or screens, for creating input files for the three main SAM modules -- SAM.hyd, SAM.sed, and SAM.yld. PSAM does not require the user to know record format or even exactly which records are needed for which calculations. The conception and initial work on this utility program were done by Dr. Nadim Aziz, Clemson University, and Ken Preslan, Tulane University.


appendix describes each screen and correlates the data requested by that screen to fields on the respective records. Several of the screens are used in more than one of the calculation options in SAM. Each screen is described only once in this Appendix. However, the description of each option will list all the screens used in that option. Table G1 is an index showing each record/screen described and its figure and section number.

G-1.2 Conventions. The following general directions and conventions are vital to understanding how to use PSAM:

- Accepted default values appear on the screens but are not usually printed to the file. Sometimes this results in an entire record not printing to the input file. Thus the input file may look odd to the user but the program will use the default values and run correctly.
- When inputting slopes, input the horizontal component, the *x* of the "1V on *x*H" notation.
- For all input entry screens, the up and down arrow keys will move the cursor sequentially between various input blocks. The left and right arrow keys move the cursor within one input block. For screens that are in the column/row format, the "TAB" key will move the cursor to the right along one line only, and the combination, "shift-TAB" will move the cursor to the left along one line.
- For most data entry screens, the lower left corner shows the record(s)into which the data on that screen will go.
- Within a calculation option, the user can back up to a screen by using "page up" or skip forward with "page down." Also, when all screens have been accessed, PSAM cycles back through all screens.
- In the "save" options, PSAM will ask for an input filename under which to save the created input file. There are no default filenames in PSAM.
- At this time, PSAM will not accept “stacked jobs,” i.e., input data files that contain a “$JOB” record.

Table G1. Record/Screen Index

G7	CT	G21	RT, CT geometry
G8	X1	G22	BL
G9	GR	G23	BR
G10	NE/KS, X1/GR geometry		**SAM.sed**
G11	PF	G24	TI with SAM.sed heading
G12	QW multiple record	G25	TF
G13	ZW	G26	VE multiple record
G14	GC		**SAM.yld methods**
G15	WT	G27	TI with SAM.yld heading
G16	Modified CT	G28	SAM.yld Calculation Options
G17	ES/WT	G29	JP for flow duration
G18	MG	G30	QQ/QD
Figure Number	Record/description	G31	QW/QS
		G32	QW/SC
G19	RS	G33	JP for flow hydrograph
G20	RR	G34	QH

G-1.3 Main Menu. Figure G1 is the PSAM Main Menu. To select an option the user can either type the number of the desired option, or scroll up or down with the arrow keys and hit return.

- Options 1, 2, and 3 will bring up the first menu of choices for their respective SAM modules.

- Option 4 clears PSAM of a previous data set so that the input screens will not contain any data. This is necessary only when one data set has been either loaded or created and the user wishes to start from scratch again.

- Option 5 allows the user to specify any type existing input file to read. The screen will change and the user can type in the desired filename, or request a directory. A file can be selected from the directory by highlighting it through the use of the arrow keys and hitting return. PSAM will notify the user that this has been accomplished and returns the cursor to Option 1 simply as the default. If an input file has been read in this manner, that file's data will appear in the appropriate places in the menus.

- Both Option 6 and Option 7 will prompt for the filename under which to save the input data. Option 6 returns the cursor to Option 1, as the default, while Option 7 takes the user back to the SAM menu. F10 will also prompt for a filename under which to save the input data and then return the user to the SAM menu. If the user does not wish to input a filename, hitting F10 again will return the cursor to the SAM menu.

- Option 8 returns the user to the SAM menu without saving any data.

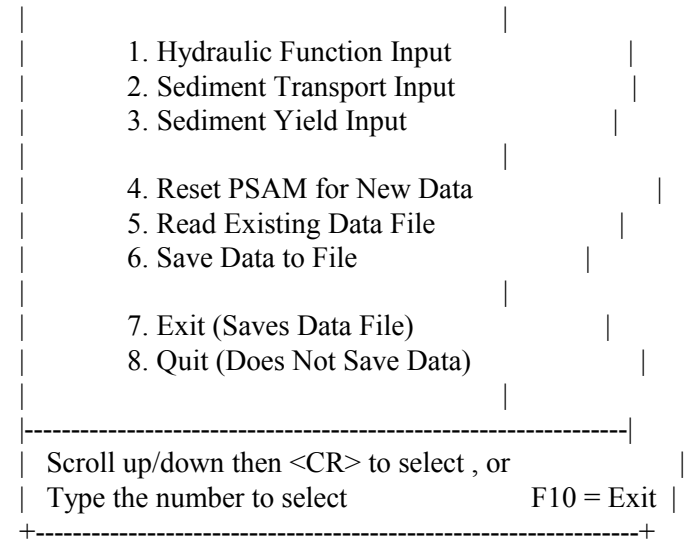


Figure G1. PSAM Main Menu.

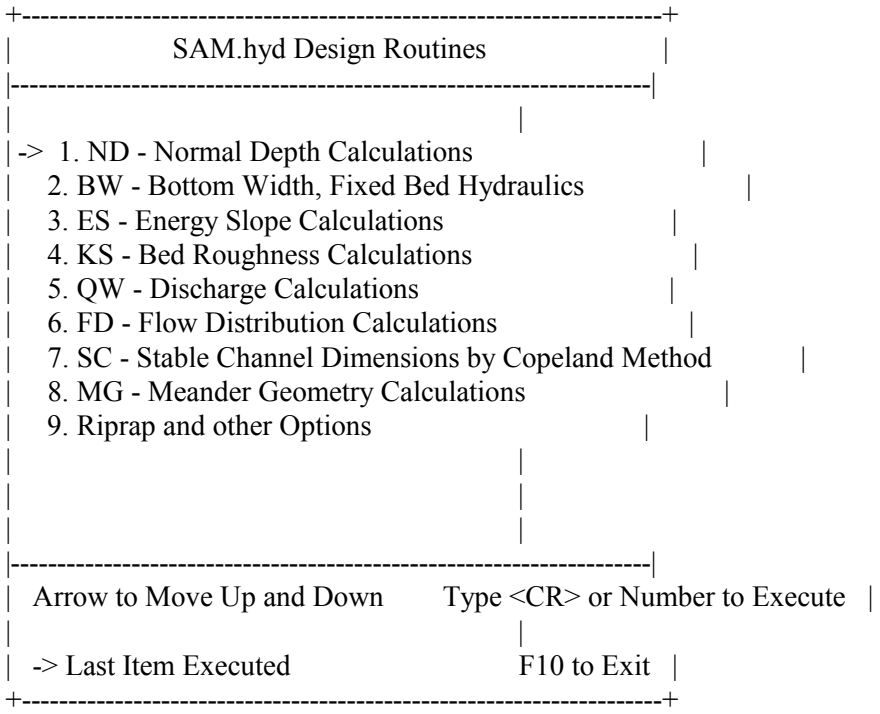


Figure G2. SAM.hyd Main Menu.

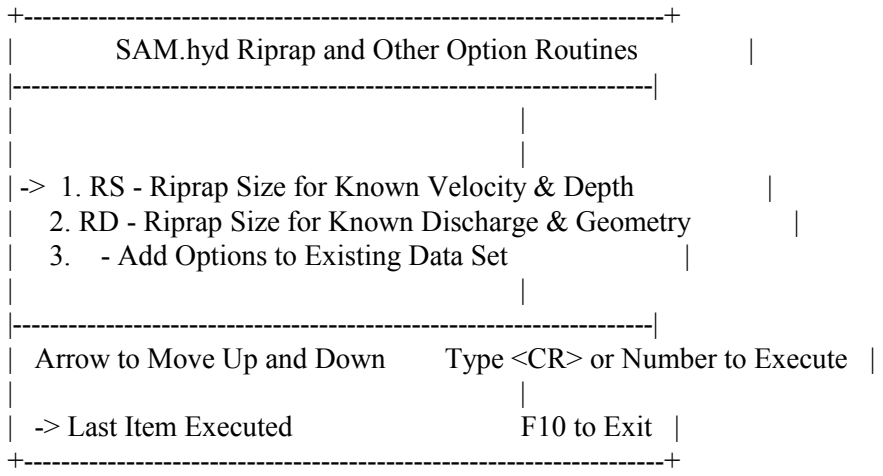


Figure G3. SAM.hyd Option 9 Menu.

G-2.1. SAM.hyd input options. Figure G2 shows the SAM.hyd design routines menu. Option 9, "Riprap and other Options," brings up the menu in Figure G3. The design option for which an input file is to be created is selected from either of these menus. Option 3 in Figure G3 is most effectively used when a SAM.hyd data set has already been read into PSAM as it offers the user several options to add to an already-created data file. Table G2 lists each available SAM.hyd calculation option and its corresponding section in the manual.

Table G2. SAM.hyd options and manual sections.

SAM.hyd Main Menu		SAM.hyd Riprap and Other Option Routines	
Menu Option	Manual Section	Menu Option	Manual Section
1	2.4	1	2.10
2	2.6	2	2.11
3	2.7	3	2.12, others
4	2.8		
5	2.9		
6	2.5		
7	2.13		
8	2.14		
9			

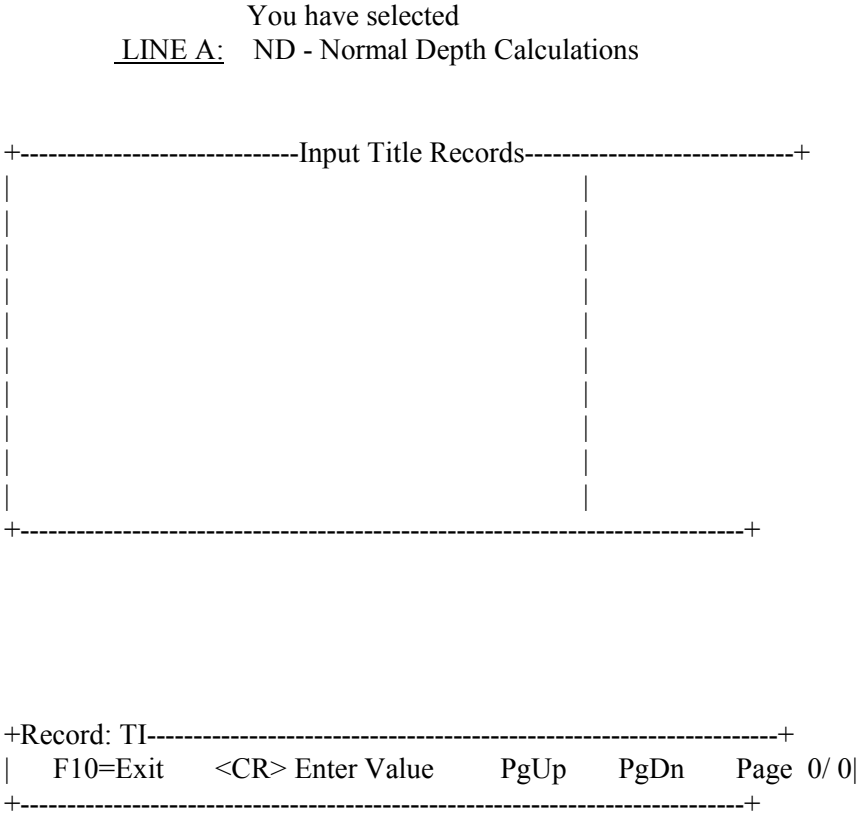


Figure G4. TI Record — showing Normal Depth Calculation Option Title.

G-2.2. Option 4 -- normal depth calculations. Since almost all the options in SAM.hyd are based around the normal depth calculations' input file, this option will be described first. These calculations are described in section 2.4 in the Manual. The screens in this option create the TI and TR records, the cross-section geometry, the QW and associated records, and the PF and ZW records screens. The "W. S. Elevations" column of the QW multiple record screen should be left blank for this calculation.

G-2.2.1. TI Records screen. Figure G4 defines the title records. Enter up to 10 lines of title information in this block. It is not necessary to put the record identification, TI, in the first two columns as PSAM does that when writing into the input file. PSAM also adds an F# record after the title record(s) as a guide to field length. This screen is in all design routines. Only the second line of text beneath the window, "Line A," changes since it echoes the design option chosen from the menu in Figure G2, or the calculation option chosen from the menu in Figure G1.

G-2.2.2. TR Record. Figure G5 defines the TR record, which governs program printout and the cross-section compositing method. It is an optional record. If the user "pages down" past this screen, there will be no extra printout. However, the user also has the option of selecting a compositing method and/or selecting to print the flow distribution. The arrow pointing to the "NO" flow distribution indicates that it is the default. The Alpha method is the default compositing method. The compositing methods available in SAM are discussed in the manual in Chapter 2.

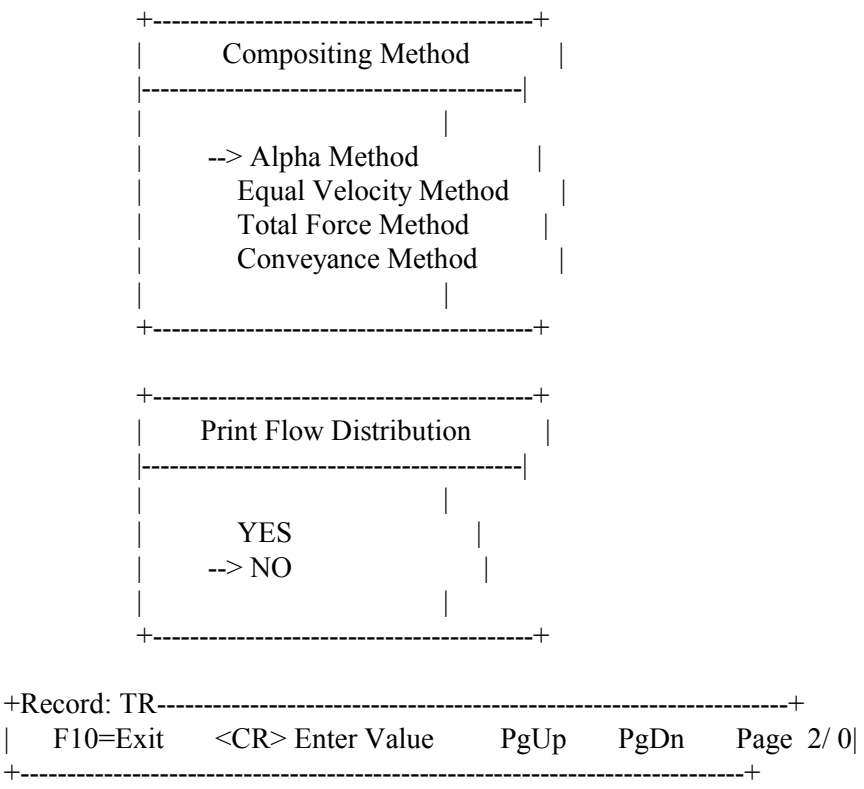


Figure G5. TR Record screen.

G-2.2.3.1. Cross-section geometry. There are two methods of prescribing the geometry: with a channel template, the CT option; or with elevation-station coordinates, the X1/GR option. In many SAM.hyd calculation options, the user will be presented with an option screen, Figure G6, to choose the type of geometry to input. Each of these methods of inputting geometry has its own flow of screens. The CT option generally requires only the CT screen. The X1/GR option requires the X1, GR, and NE/KS screens. Whenever this choice is available, the user will select one option via this screen, Figure G6, and then only the necessary screens will appear.

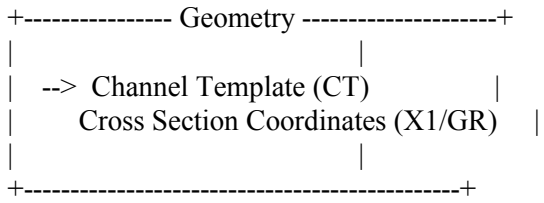


Figure G6. Geometry Option screen.

G-2.2.3.2. Viewing the cross-section shape. After the geometry is input, from either method, the shape of

the cross section can be viewed on the screen, but it cannot be plotted to the printer. While in the CT or GR record screen, the F1 key will plot to the screen, in black and white, the cross section, with a scale.

G-2.2.3.3. CT geometry option. This option allows for the specification of a complex cross-section composed of up to three trapezoidal templates, or CT records. Figure G7 defines a CT record. Items A, B, C, D, and E correspond to fields 1 through 5 respectively. Item F goes in field 7, item G in field 9, item H in field 6, item I in field 8, and item J in field 10. If multiple CT records are used, the first prescribes the low-flow channel, the second the normal flow channel, and the third CT record the high flow berm. The user may page down if multiple CT records are not needed. The "Roughness value" prompt will change to "Enter Ks or n-values" if the Manning, Keulegan or Strickler equation is chosen.

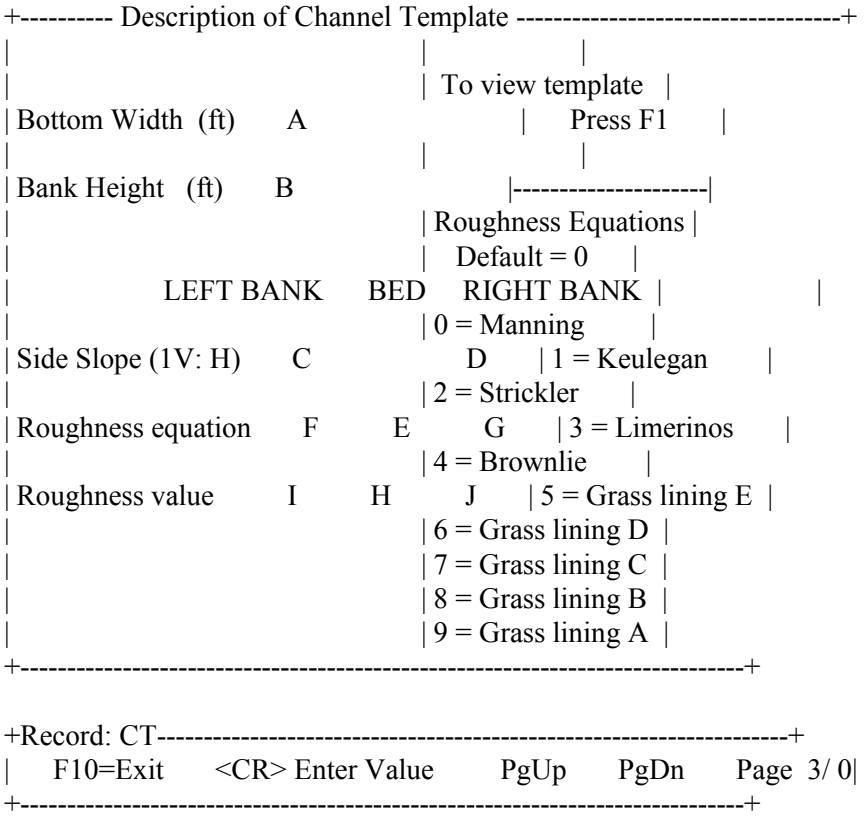


Figure G7. The CT Record.

G-2.2.3.4. X1/GR geometry option. This option allows for the inputting of geometry through elevation-station pairs. It consists of the X1, GR, and NE/KS screens.

G-2.2.3.4.1. X1 record. Figure G8 defines the X1 record. Items A, B, C, and D correspond to fields 1 through 4, respectively. Item A is only for user identification of the cross-section and is therefore optional. The maximum number of cross-section points, item B, is 100. Items C and D, if input, must each equal one of the station values put into the next menu.

G-2.2.3.4.2. GR record. Figure G9 defines the GR record, the listing of elevations and station

coordinates. For ease of input, PSAM offers the user a paired data input format. The maximum number of coordinate points is 100.

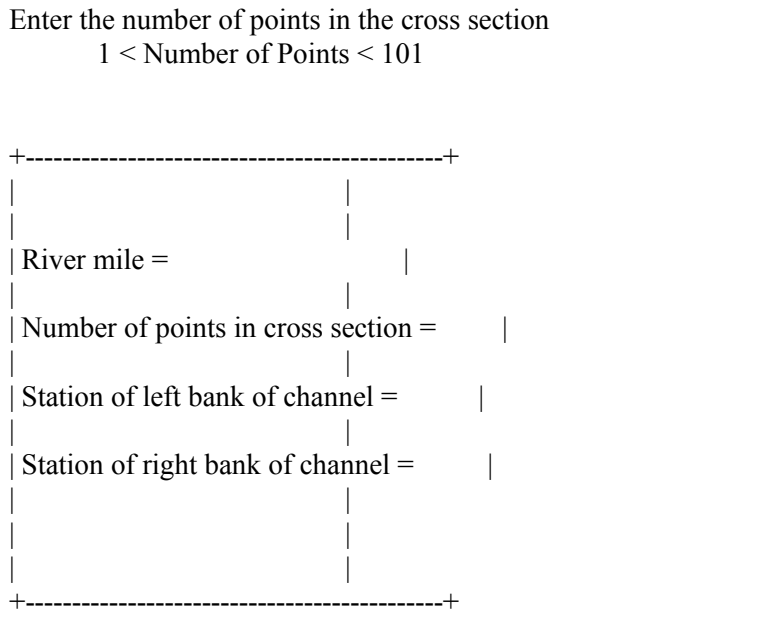
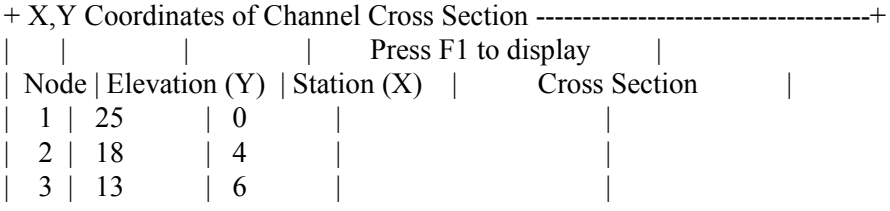


Figure G8. The X1 record.

G-2.2.3.4.3. NE/KS multiple record screen. Figure G10 defines the NE and KS records. This data is put in by panels, where a panel is the space between coordinate points. However, a value does not need to be input for every panel. If several consecutive panels have the same value, only the first value needs to be input. The program will default all blanks to the previous panel's value. If the geometry comes from the X1/GR screens, the station and elevation data will appear to define the panels, and PSAM will request the number of data entries as determined by the number of data pairs input to the GR screen, as shown by the example data in Figure G10.

*** This ends the series of screens concerned with geometry input. ***



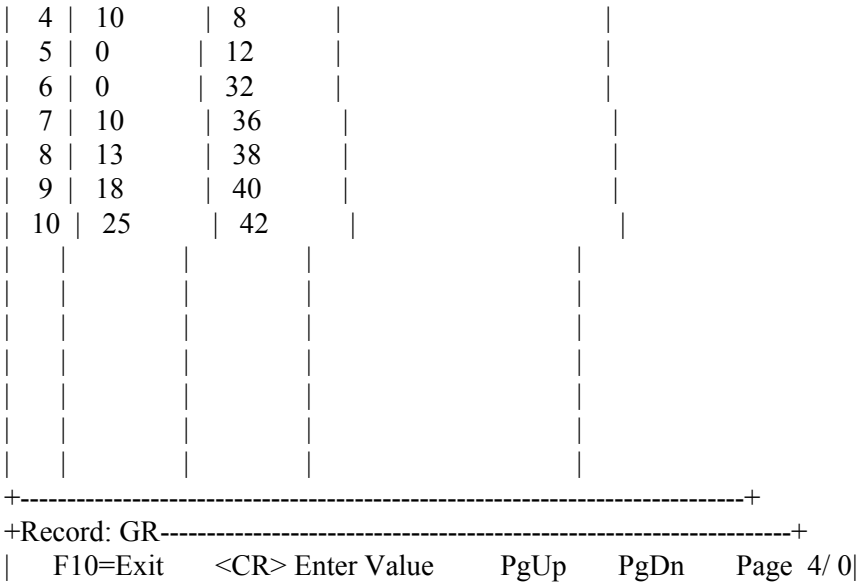


Figure G9. The GR record.

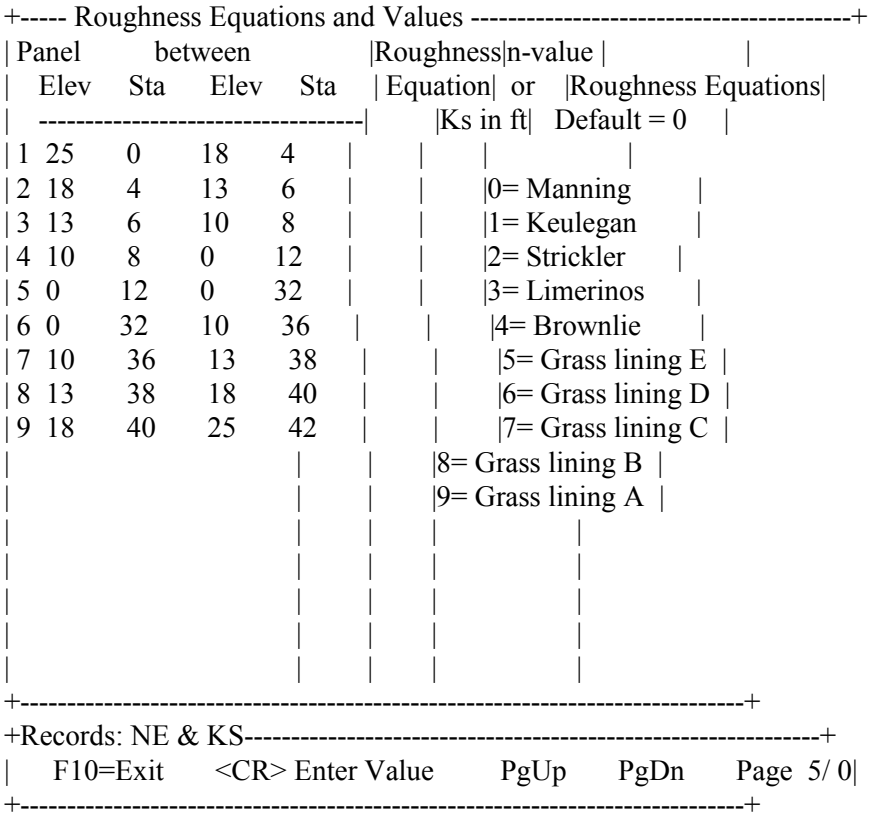


Figure G10. The NE and KS records, geometry from X1/GR input.

G-2.2.4. PF record. Figure G11 shows the PF record screen. Item A is descriptive and optional and corresponds to field 2 of the PF record. Item B goes in field 4. It **must** have a value, as noted. Items C and D go in fields 5 and 6 respectively. Lines 2 and 3 would fill out fields 7 through 10 of this record. Data entered, as pairs, on lines 4 through 18 would appear on PFC-records, PF-Continuation records, in the same manner. Since this is paired data, PSAM offers the user a paired data input format.

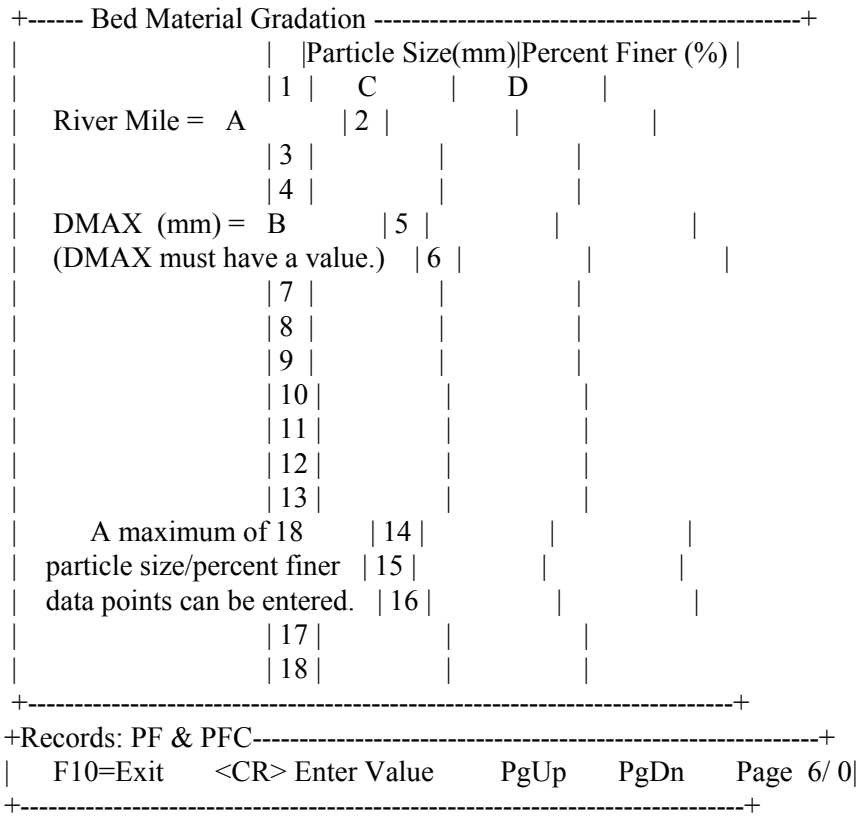


Figure G11. PF Record.

G-2.2.5. QW multiple record screen. Figure G12 shows the screen which provides input to four records: the QW, WS, ES, and WT records. Put one "data set" per line; SAM allows up to 10 lines. It is necessary to code only values that change. For example, if the energy slope is constant for all Q's, then code only one value and SAM will fill in the rest. The same rules apply for all these data records. (See Appendix C for the rules for these records.) The water temperature defaults to 60^{o} F if none is input. However, if a temperature is input, it remains the default for all the subsequent WT values according to the same rule as for the other record types on this screen.

NOTE: In order to have SAM.hyd make the normal depth calculations, the "W.S. Elevations" column of this screen should be left blank.

G-2.2.6. ZW record. Figure G13 shows the screen for the optional ZW record. It is a schematic of the plots produced by DSS through the SAM menu. It allows the user to see where the descriptive input

would be printed on the plot. The "legend key" is set by the SAM package. This record appears in every input option for which plotting is available. The designations "A", "B", and "F" in Figure G13 correspond to the data's position in the ZW record.

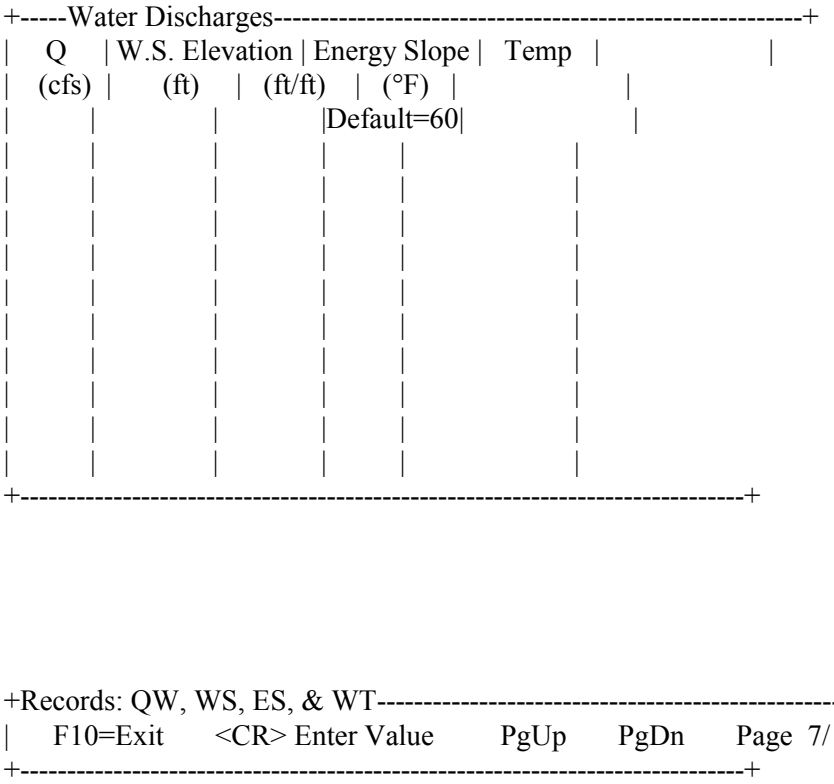
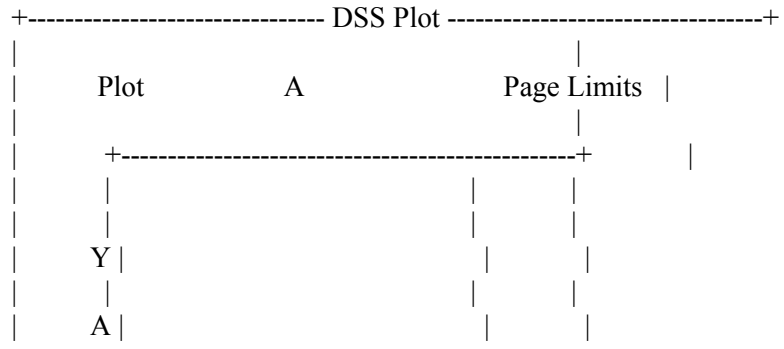


Figure G12. The QW multiple record screen.



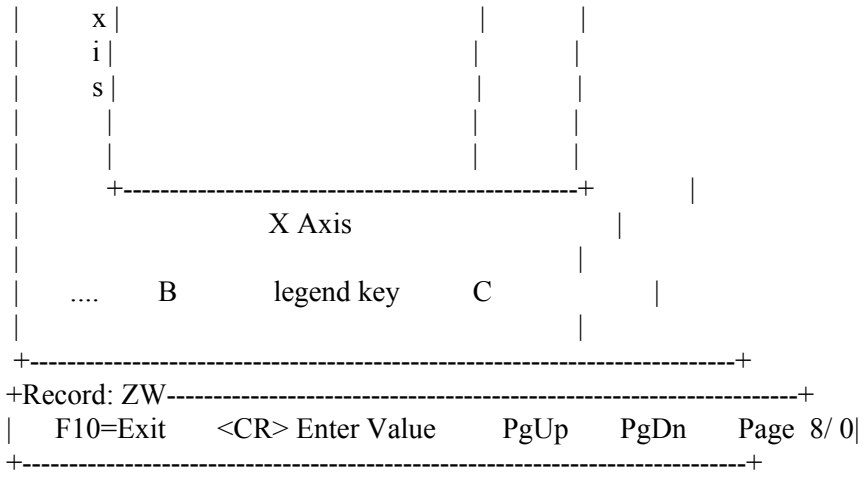


Figure G13. ZW record.

G-2.4. Option 2 -- bottom width calculations. These calculations are described in section 2.6 in the Manual. The screens in this option create the TI and TR records, the CT record, the QW and associated records, the PF record, and the ZW record. These records are all the same as those described earlier, see Table G1.

> **Note:** In order to allow SAM to calculate bottom width, item A, "Bottom Width," **must** be left blank on the CT record, Figure G7. If multiple CT records are used, item A **must** be left blank in all of them. This explains why the X1/GR geometry option is not an option for this calculation.

G-2.5. Option 3 -- Energy slope calculations. These calculations are described in section 2.7 in the Manual. The screens in this option create the TI and TR records, the cross-section geometry choice and associated records, the QW and associated records, and the PF and ZW records. These records are all the same as those described earlier, see Table G1.

> **Note:** In order to allow SAM to calculate energy slope, the "Energy Slope" column of the QW multiple record screen, Figure G12, must be left blank.

G-2.6. Option 4 -- Hydraulic roughness calculations. These calculations are described in section 2.8 in the Manual. The screens in this option create the TI and TR records, the cross section geometry, the QW and associated records, and the PF and ZW records. These records are all the same as those described earlier, see Table G1. SAM looks at the KN and/or KS records to determine if roughness calculations are desired.

> **Note:** In order to allow SAM to calculate hydraulic roughness, the roughness equations chosen must be equation numbers 0, 1, or 2, and the KS or KN records must contain a negative value. The absolute value of this number tells the program the ratio of roughness in that element to the composite roughness.

G-2.7. Option 5-- Discharge calculations. These calculations are described in section 2.9 in the Manual.

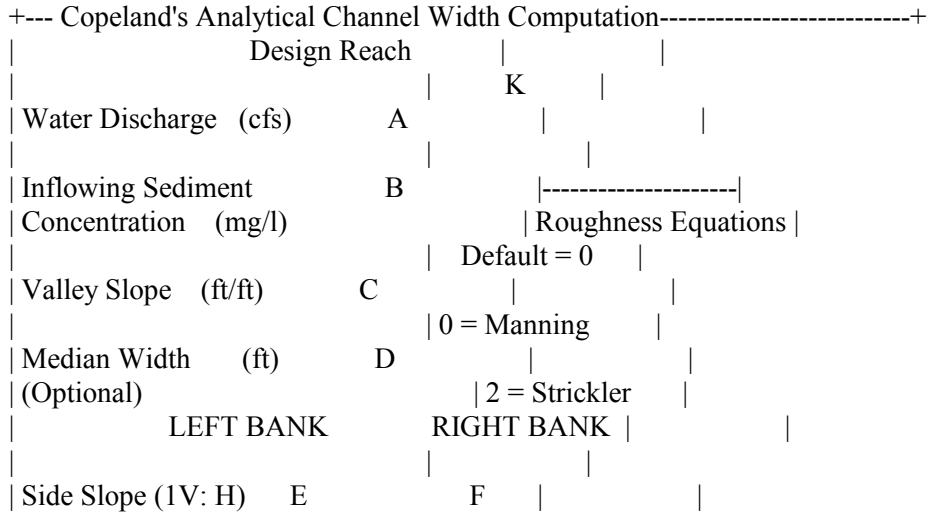
The screens in this option create the TI and TR records, the cross section geometry and associated records, the QW and associated records, and the PF and ZW records. These records are all the same as those described earlier, see Table G1.

> **NOTE:** In order to allow SAM to calculate the discharge, the "Q" column of the QW multiple record screen, Figure G12, must be left blank.

G-2.8. Option 6 -- Flow distribution calculations. These calculations are described in section 2.5 in the Manual. The screens in this option create the TI and TR records, the cross section geometry, the QW and associated records, and the PF and ZW records. These records are all the same as those described earlier, see Table G1. If all requested data is supplied, SAM automatically calculates the flow distribution. However, these calculations can also be requested in any calculation via the TR record, Figure G5.

G-2.3.1. Option 7 -- stable channel dimensions by Copeland method. These calculations are described in section 2.13 in the Manual. The screens in this option create the TI, GC, WT, and the ZW records, and possibly the TR, CT, PF and ES/WT records. The flow of screens used in this option depends on whether or not the inflowing sediment concentration is prescribed, as stated in Appendix C, on the GC-record. If the concentration is input by the user, the TR, CT, PF and ES/WT records will not appear. The TI, TR, CT and PF records are the same as described earlier, see Table G1.

G-2.3.2. Copeland's Analytical Channel Width Computation. This screen, Figure G14, defines the GC record. Items A through J correspond with fields 1 through 10 of the GC record. If item B is left blank, PSAM will offer the CT, PF, and ES/WT screens allowing the user to specify the supply reach geometry for the inflowing sediment concentration calculations. The area marked "K" on this screen offers descriptions about most of the blanks on this screen. Notice that only two roughness equations are available for this calculation, and these will be applied only to the banks.



```
|                                      |              |
| Roughness equation      G                 I      |              |
|                                      |              |
| Roughness value         H                 J      |              |
+-------------------------------------------------------------------------+

+Record: GC-------------------------------------------------------------------+
|    F10=Exit      <CR> Enter Value        PgUp      PgDn      Page  2/ 4|
+-------------------------------------------------------------------------+
```

Figure G14. The GC Record screen.

G-2.3.3. The WT Record screen. This screen, Figure G15, allows the user to input up to ten water temperatures. The same rules apply as described for water temperature on the QW multiple record screen, section G-2.2.5.

G-2.3.4. Modified CT record screen. When the inflowing sediment concentration is not specified on the GC record, SAM.hyd expects the geometry of the supply reach to be prescribed in order to be able to calculate that concentration. In the calculations using the supply reach, the Brownlie equation is used for the bed, thus nullifying the need to input the bed equation and K_s on the CT record. Therefore, these fields have been omitted from this screen in this application, Figure G16. Also note that only two roughness equations are allowed for the banks.

G-2.3.5. ES/WT multiple record screen This screen, Figure G17, is a subset of the QW multiple record screen. It defines the ES and WT records. The same rules apply as described for the QW multiple record screen, section 2.2.5.

```
+------Water Temperature Record-----------+
|  Temperature   |                |
|      (°F)     |                |
|   Default = 60  |                |
|-----------------+----------------------|
|                |                |
|                |                |
|                |                |
|                |                |
|                |                |
|                |                |
|                |                |
|                |                |
|                |                |
|                |                |
+---------------------------------------+


+Record: WT-------------------------------------------------------------------+
|    F10=Exit      <CR> Enter Value        PgUp      PgDn      Page  5/ 3|
```

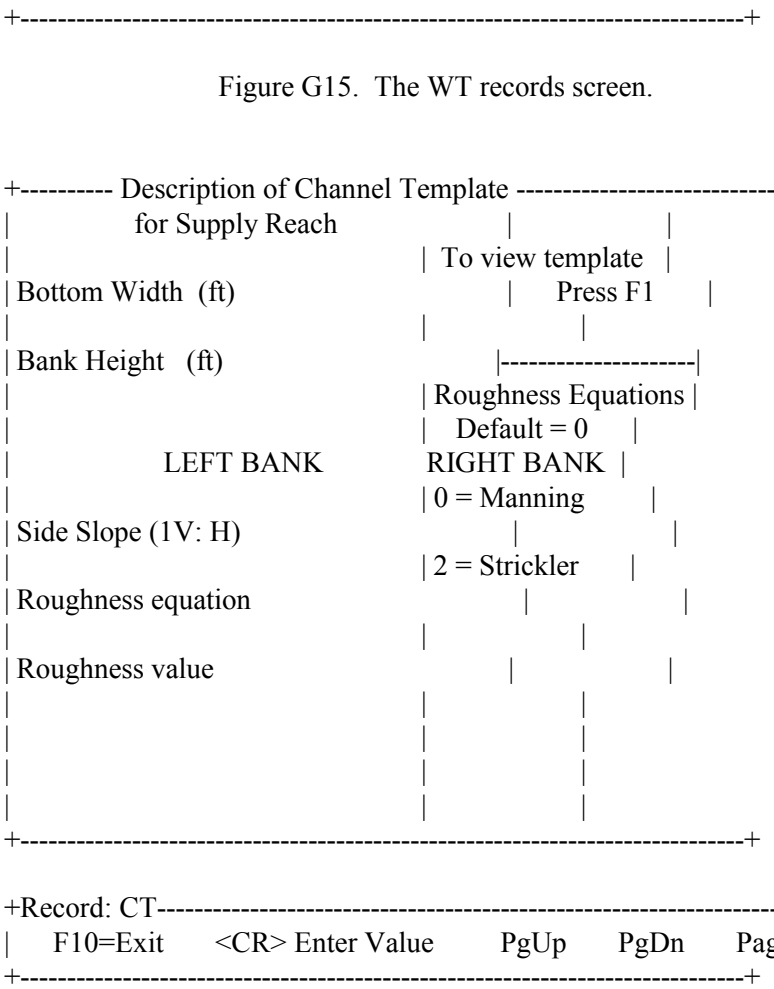
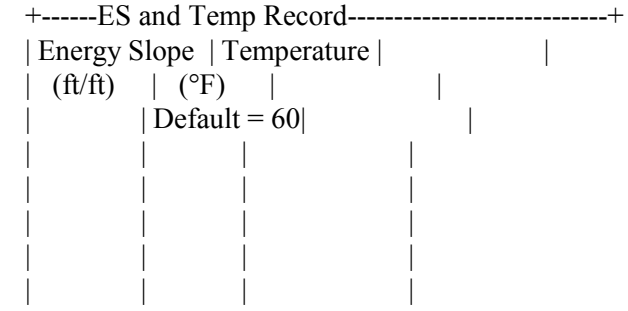


Figure G15. The WT records screen.

Figure G16. Modified CT Record screen for the GC option.

G-2.3.6. Meander Geometry Option. These calculations are described in section 2.14 in the Manual. The only screen in this option creates the MG record. The meander arc length (the distance along the channel for the wavelength), B, goes into field 2, and the meander wavelength, A, goes in field 1.



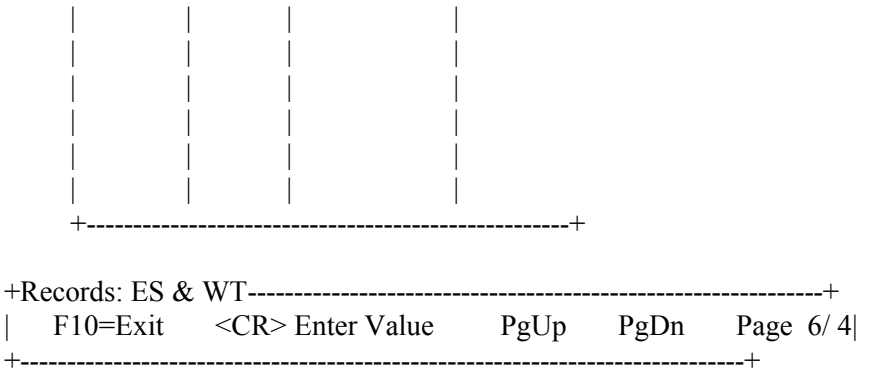


Figure G17. The ES/WT records screen.

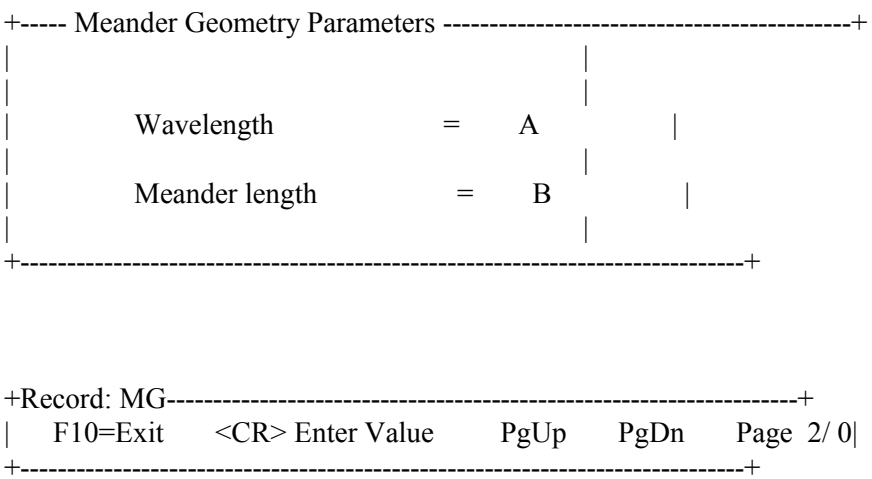


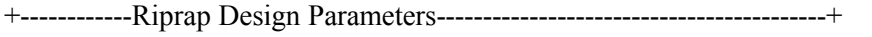
Figure G18. MG Record screen.

G-2.9 Option 9 — Riprap and other options. Choosing Option 9 brings up another screen of SAM.hyd calculation choices, Figure G3.

G-2.9.1. Option 1 -- Riprap size for known velocity and depth. These calculations are described in section 2.10 in the manual. The screens used in this option create the TI, RS, and RR records. The TI record is the same as that described in section G-2.2.1. PSAM will insert an RT record with default values of 1.0. The RT record is a flag for the SAM.hyd program.

G-2.9.2 RS record screen. Figure G19 defines the RS record. Items A, B, C, D, and E correspond to fields 1, 2, 3, 4, and 5 of the RS record. Item D is optional.

G-2.9.3 RR Record screen. Figure G20 defines the RR record. Items A and B correspond to fields 1 and 2 on the record. Field 3 of the RR record is left blank. Items C, D, and E correspond to fields 4, 5, and 6, respectively.



```
|                                                                          |
| Water velocity over toe of bank          (ft) =   A                      |
|                                                                          |
| Depth over toe of bank                   (ft) =   B                      |
|                                                                          |
| Slope of revetted bank                    =   C                          |
|                                                                          |
| Water surface width if location is in bend (ft) =   D                    |
|                                                                          |
| Ratio of stone thickness to max. stone diameter =   E                    |
|                                                                          |
+--------------------------------------------------------------------------+


+Record: RS-----------------------------------------------------------------+
|    F10=Exit      <CR> Enter Value        PgUp      PgDn      Page  2/ 0|
+--------------------------------------------------------------------------+
```

Figure G19. The RS record.

G-2.10.1 Option 2 -- Riprap Size for known discharge and geometry. These calculations are described in section 2.11 in the Manual. The screens in this option create the TI and TR records, the cross-section geometry, RT record(s), the RR and PF records, the QW and associated records and the ZW record.

G-2.10.2. RT record. In Figure G21 the screen prompts for values for only 3 panels because for this example the geometry came from a CT record. The first value is for the left overbank, the second is for the channel and the last is for the right overbank. If the geometry had come from the X1/GR option then the RT record would prompt for the proper number of values according to the number of panels prescribed.

```
+-----------Riprap Properties-------------------------------------------+
|                                                                        |
| Specific gravity of riprap                =    A     (Default = 2.65)  |
|                                                                        |
| Bend radius, to centerline of channel (ft)    =    B                   |
|                                                                        |
| Cross section shape (0-Natural, 1-Trapezoidal) =    C     (Default = 0)    |
|                                                                        |
| EM safety factor                          =    D     (Default = 1.1)   |
|                              (Default is the minimum suggested value)|
|                                                                        |
| EM coefficient of incipient failure       =    E     (Default = 0.3)   |
|                                                                        |
+------------------------------------------------------------------------+
```

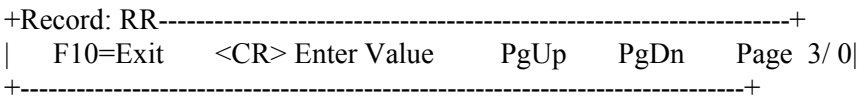


Figure G20. The RR record.

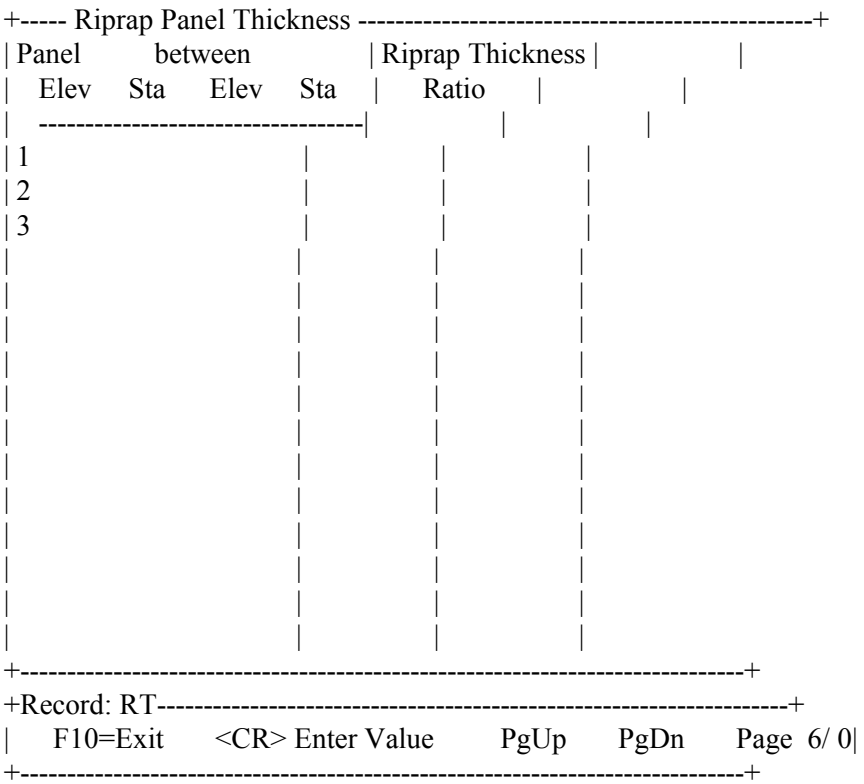
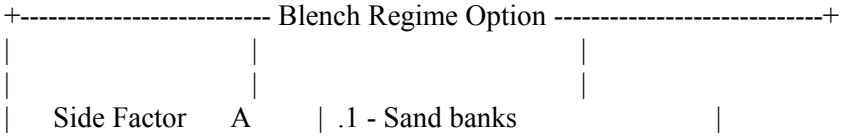


Figure G21. The RT record, geometry from CT records.

G-2.11.1. Option 3 -- add options to existing data set. This option provides a quick way to add or delete several calculation options to a basic, existing input set. It was not designed for inputting a new input set although it can be used that way. If this option is chosen with an existing input set already "in" PSAM (either read in or created through another option in SAM.hyd), the TI and TR record screens come up already filled in, and the appropriate geometry screens come up also filled in. The RT and RR screens appear next. At this point riprap can be added or this input can be skipped with a "page down." The PF and QW screens appear next, also filled in. All these records are the same as those described earlier, see Table G1.



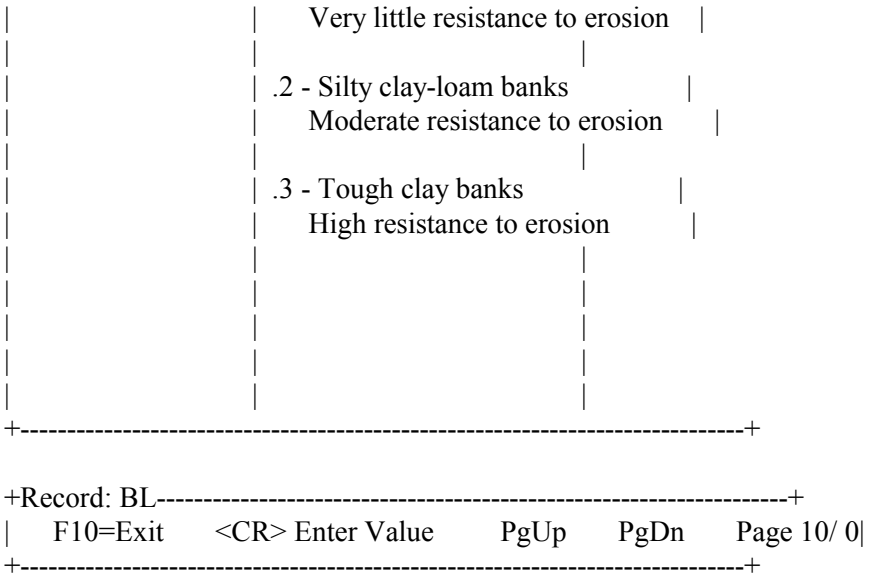


Figure G22. BL record screen.

G-2.11.2. BL and BR records. The next input choice is the BL record screen for Blench regime input, Figure G22. Item A corresponds to field 1 of the BL record. The next choice is the BR record screen, Figure G23. Items A through E correspond to fields 1 through 6 of the BR record. The screen path for this option is completed by the ZW record screen, described in section G-2.2.6.

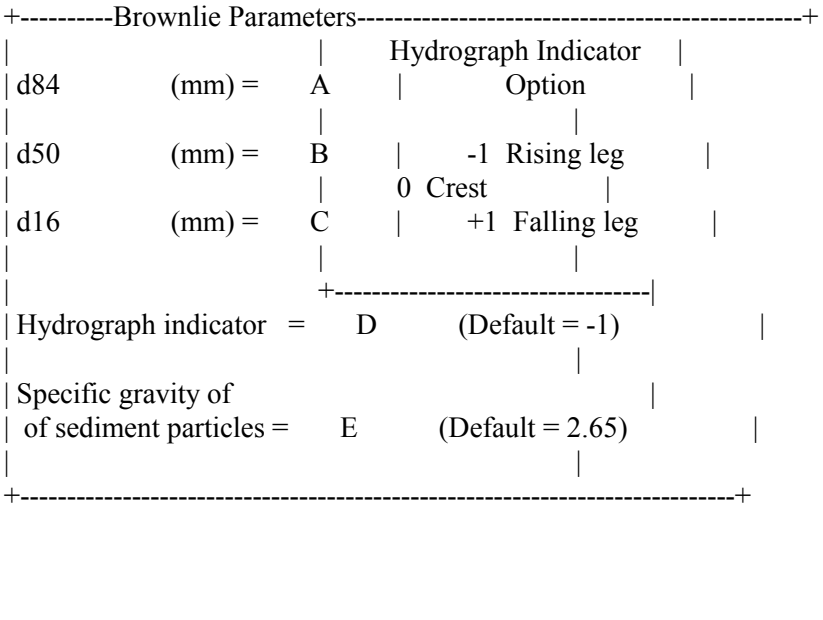


Figure G23. BR record screen.

G-3.1. SAM.sed input options. This option, number 2 on the PSAM main menu as shown in Figure G1, is described in chapter 3 in the Manual. The screens used in this option create the TI and TF records, the VE and associated records, the PF, and ZW records.

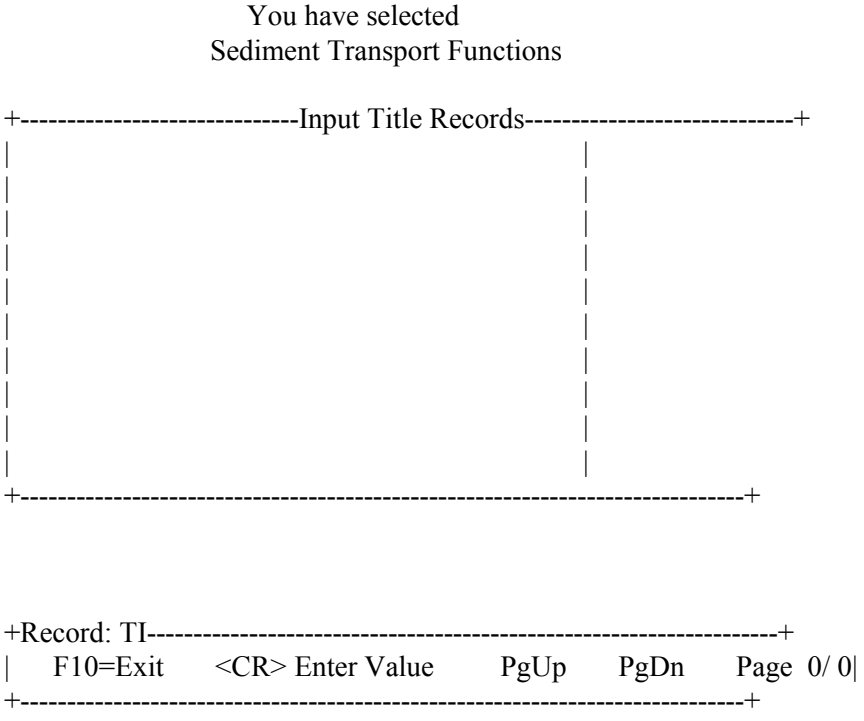
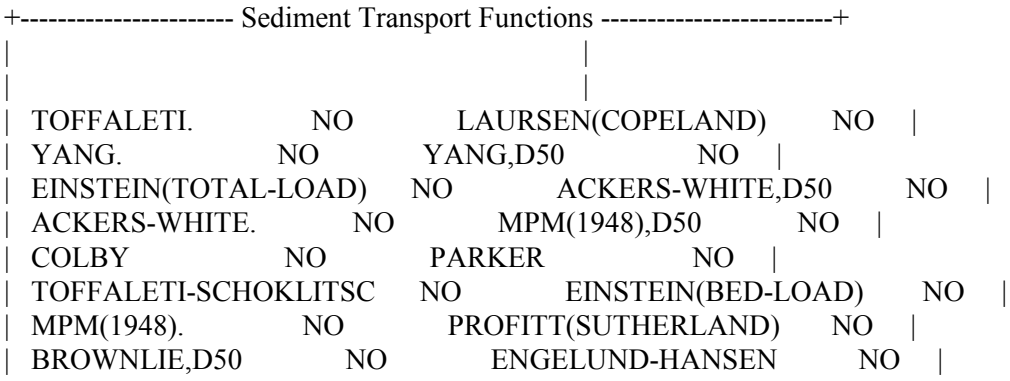


Figure G24. TI Record showing the SAM.sed heading.

G-3.2. TI records. The title data and screen, the TI records, for SAM.sed are the same as those for SAM.hyd, as described in section G-2.2.1, except for the labeling at the top of the screen.

G-3.3. TF records. Figure G25 defines the TF records, described in chapter 3.2 in the Manual. The up and down arrow keys move the cursor up and down the list of no's and yes's. The user can toggle between yes and no at the cursor by hitting <enter>.



```
|  TOFFALETI-MPM          NO          SCHOKLITSCH          NO    |
|  LAURSEN(MADDEN),1985   NO          VAN.RIJN             NO    |
|                                          |
|                                          |
+-------------------------------------------------------------------------+

+Record: TF-------------------------------------------------------------------+
|    F10=Exit     <CR> Enter Value      PgUp     PgDn     Page  2/ 0|
+-------------------------------------------------------------------------+
```

Figure G25. TF Records.

G-3.4. VE multiple record screen. Figure G26 defines the VE, DE, WI, QW, ES, and WT records. One line across these six data items comprises one "data set" for SAM.sed. There can be up to 10 lines in one input file. The same rules apply as described for the QW multiple record screen, section G-2.2.5.

```
 +------------------------- Hydraulic Parameters ----------------------------+
|   Water  |  Water  |   Width  |   Depth  | Energy  |  Water    |
| Discharge | Velocity |         |          |  Slope  | Temperature |
|   (cfs)  |  (fps)  |   (ft)   |   (ft)   | (ft/ft) |Default = 60 |
|----------+---------+----------+----------+---------+-------------|
| 4000     |  2.1    |  3.5     |  4.0     | .0003   | 69          |
| 8000     |  3.5    |  6.5     |  6.0     | .0003   |             |
|          |         |          |          |         |             |
|          |         |          |          |         |             |
|          |         |          |          |         |             |
|          |         |          |          |         |             |
|          |         |          |          |         |             |
|          |         |          |          |         |             |
|          |         |          |          |         |             |
|          |         |          |          |         |             |
 +-------------------------------------------------------------------------+

+Records: VE, DE, WI, QW, ES, & WT--------------------------------------------+
|    F10=Exit     <CR> Enter Value      PgUp     PgDn     Page  3/ 0|
+-------------------------------------------------------------------------+
```

Figure G26. VE multiple record screen.

G-3.5. PF record. The PF record data and screens are the same as those for SAM.hyd, see Figure G11.

G-3.7. ZW record. The ZW screen and data are the same as for SAM.hyd, see Figure G13.

G-4.1. SAM.yld input option. This option, number 3 on the PSAM main menu as shown in Figure G1, is described in section 4 in the Manual. Figure G27 shows the TI record screen with the SAM.yld heading. The screens available in this option are the TI, JP, QQ and QD, QW and QS, QH, and QW and SC. The first screen in this option offers choices on calculation method and sediment measurement type. Movement between the options is done with the up and down arrows, and an option is selected by hitting

<enter>. An arrow will mark the choices made. The following discussion of the screens will look at all combinations of these four choices. The choice made at the calculation method screen, Figure G28, will be determined by the type of data the user wishes to input.

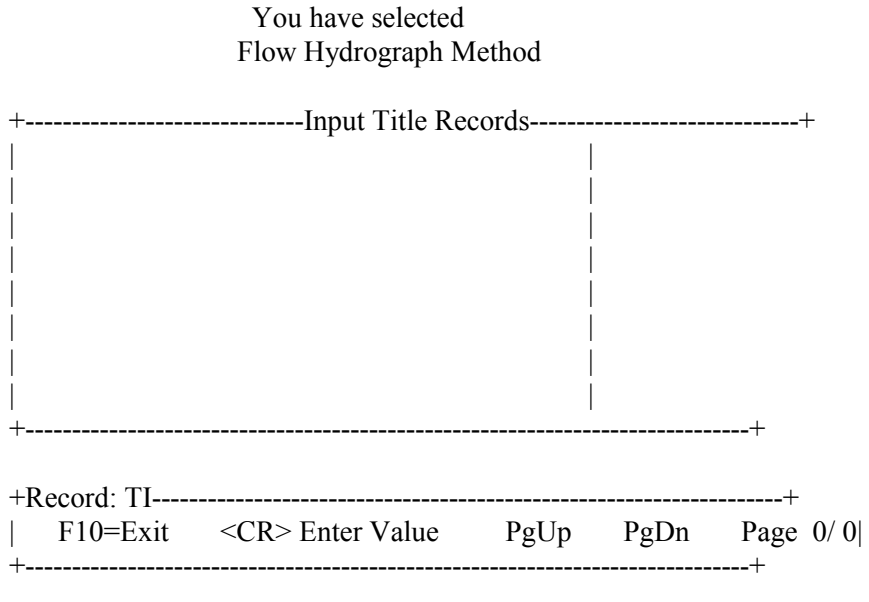


Figure G27. TI Record with the SAM.yld headings.

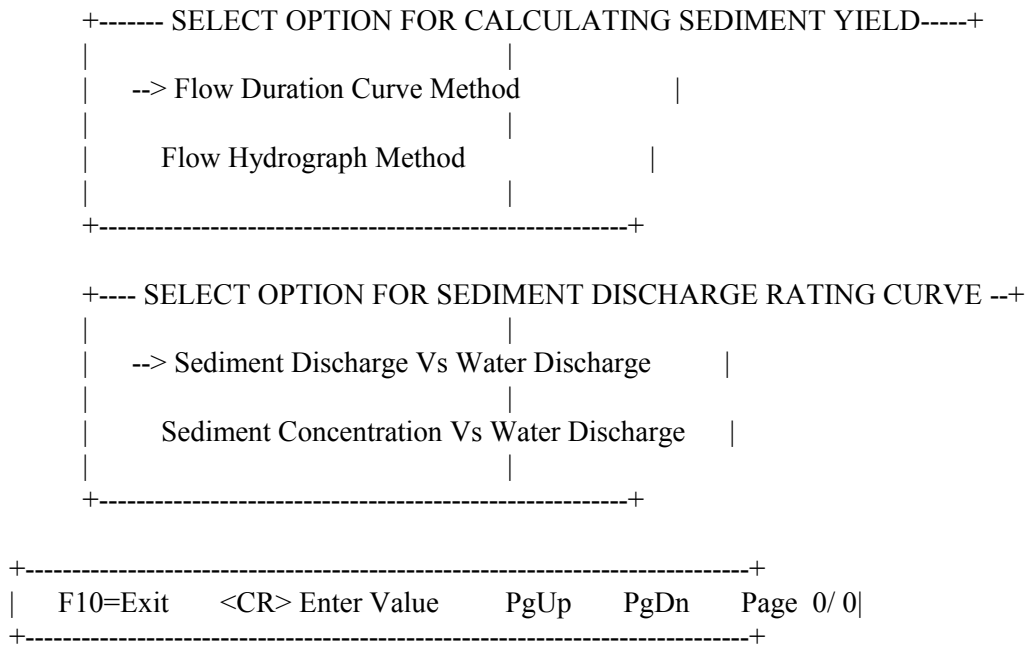


Figure G28. SAM.yld Calculation Methods.

G-4.2. Flow-duration--Sediment Discharge rating curve method. This combination is described in chapter 4 in the Manual. The screens in this option create the TI and JP records, QQ/QD and the QW/QS records.

The TI record screen, Figure G27, is the same as in SAM.hyd, except the heading has changed.

G-4.2.1. JP record screen. Figure G29 defines the JP record for the flow duration method. Item A goes in field 1, item B in field 4, item C in field 7, item D in field 3 and item E in field 5 of the record.

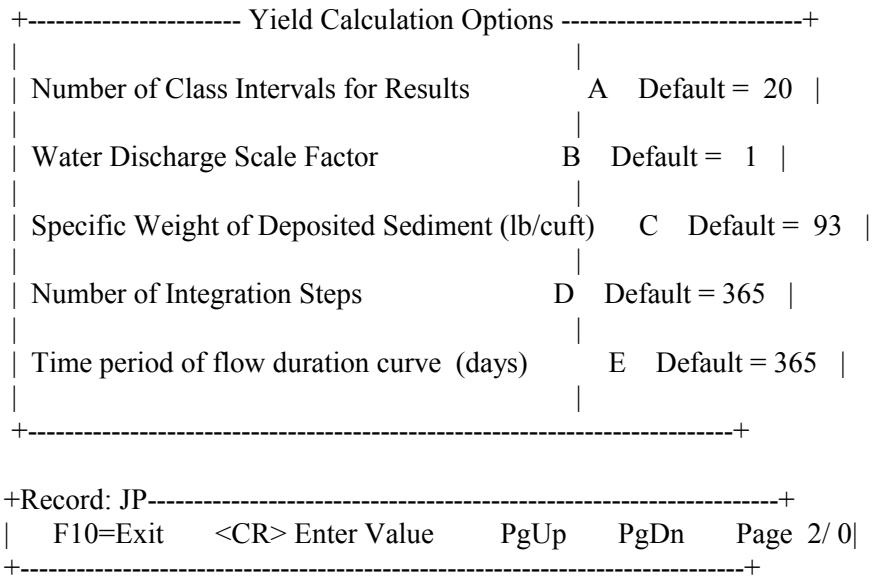
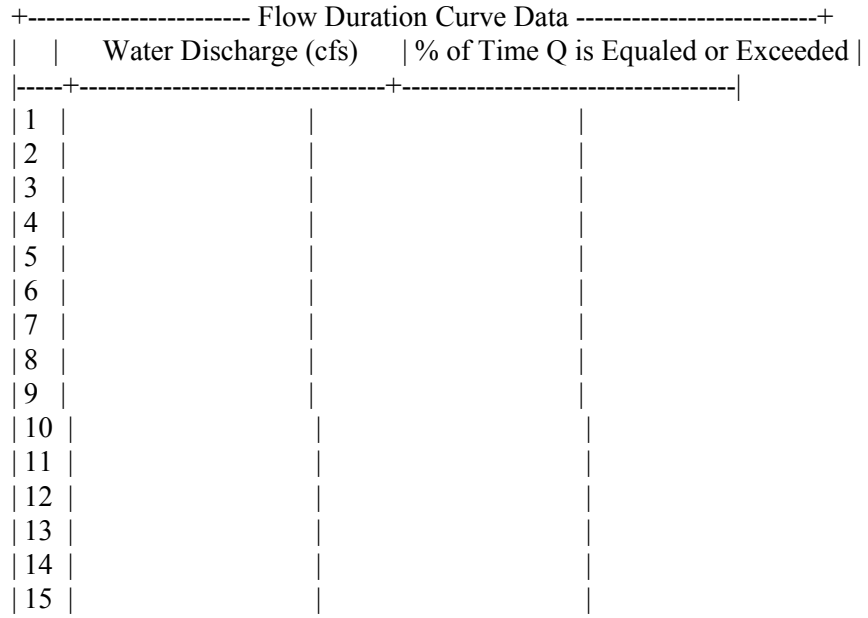


Figure G29. JP record for Flow-duration methods.

G-4.2.2. QQ/QD records screens. Figure G30 defines the QQ and QD records for the flow duration method. The water discharge and flow duration are essentially paired data, and PSAM offers the user a paired data input format. There can be up to 100 pairs of data.



```
| 16 |                        |                        |
 +-------------------------------------------------------------------------+
+Records: QQ & QD-----------------------------------------------------------+
|    F10=Exit      <CR> Enter Value       PgUp      PgDn      Page  3/ 0|
+-------------------------------------------------------------------------+
```

Figure G30. QQ/QD records.

G-4.2.3. QW/QS records screen. Figure G31 defines the QW and QS records for the flow-duration sediment discharge rating curve method. The water discharge and sediment discharge are essentially paired data, and PSAM offers the user a paired data input format. There can be up to 10 pairs of data.

```
 +--------------------- Sediment Discharge Rating Table ----------------------+
|   |     Water Discharge (cfs)       |   Sediment Discharge (Tons/Day)  |
|---+---------------------------------+----------------------------------|
| 1 |                                 |                                  |
| 2 |                                 |                                  |
| 3 |                                 |                                  |
| 4 |                                 |                                  |
| 5 |                                 |                                  |
| 6 |                                 |                                  |
| 7 |                                 |                                  |
| 8 |                                 |                                  |
| 9 |                                 |                                  |
| 10|                                 |                                  |
 +-------------------------------------------------------------------------+
```

```
+Records: QW & QS-----------------------------------------------------------+
|    F10=Exit      <CR> Enter Value       PgUp      PgDn      Page  4/ 0|
+-------------------------------------------------------------------------+
```

Figure G31. QW/QS records.

G-4.3.1. Flow-duration--sediment concentration method. This combination is described in chapter 4.2.2 of the Manual. It is a variation of the flow-duration sediment discharge method with the difference being that the sediment discharge is input as sediment concentration in mg/*l* on the SC-record. The screens in this option create the TI, JP, QQ/QD and the QW/SC records. The TI, JP, and QQ/QD records are the same as described earlier, see Table G1.

G-4.3.2. QW/SC record for the sediment concentration input. Figure G32 defines the QW and SC records for inputting sediment concentrations. The water discharge and sediment concentration are paired data, and PSAM offers the user a paired data input format. The maximum number of data pairs is 10.

G-4.4.1. Flow Hydrograph--Sediment Discharge rating curve method. This combination is described in chapter 4 in the Manual. The screens used in this option create the TI, QH, JP, and the QW/QS records. The TI record is the same as described above. The QW/QS record is the same as described in section G-4.2.3.

G-4.4.2. JP record. Figure G33 defines the JP record for the flow hydrograph method. Item A goes in field 1, item B in field 4, item C in field 7, item D in field 6. Notice that item D is different from items D or E in Figure G29.

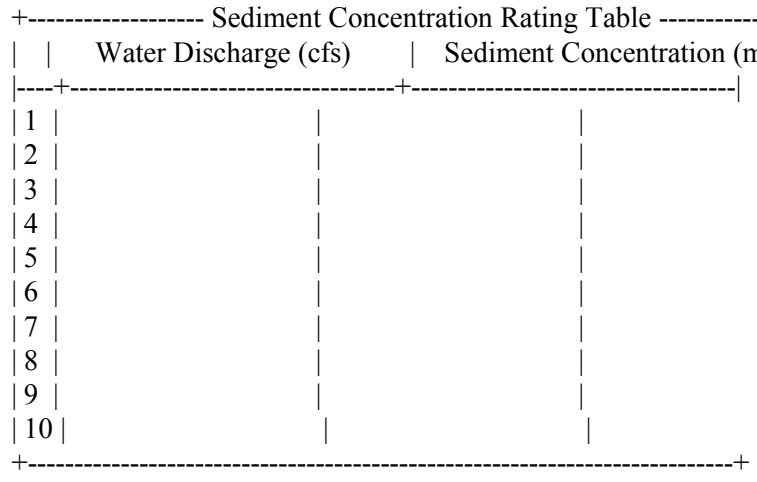
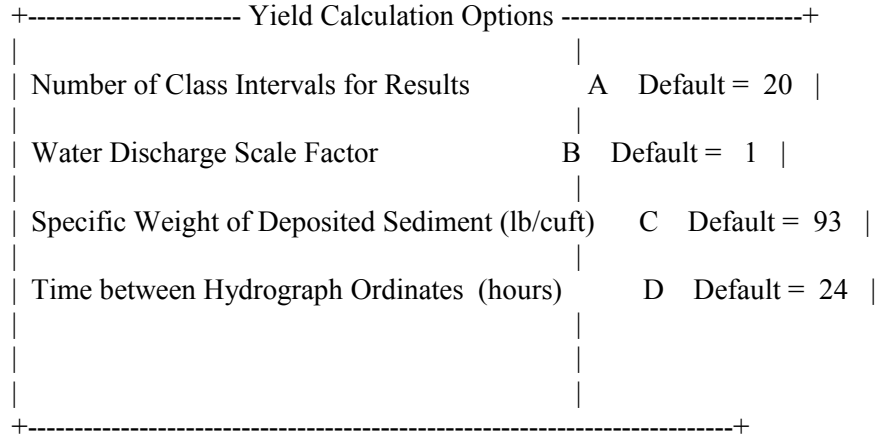


Figure G32. QW/SC record.



```
+Record: JP-------------------------------------------------------------------+
|    F10=Exit      <CR> Enter Value       PgUp      PgDn      Page  2/ 0|
+-----------------------------------------------------------------------------+
```

Figure G33. JP record for flow hydrograph method.

G-4.3.1. Flow-duration--sediment concentration method. This combination is described in chapter 4 of the Manual. It is a variation of the flow-duration sediment discharge method with the difference being that the sediment discharge is input as sediment concentration in mg/l on the SC-record. The screens in this option create the TI, JP, QQ/QD and the QW/SC records. The TI, JP, and QQ/QD records are the same as described earlier, see Table G1.

G-4.4.3. QH record screens. Figure G34 defines the QH records for the flow hydrograph method. This screen does not offer the paired data format. There can be up to 250 data points.

```
 +-------------------------- Flow Hydrograph Data ----------------------------+
|    |     Water Discharge (cfs)                                              |
|-----+-----------------------------------------------------------------------|
| 1  |                                                  |
| 2  |                                                  |
| 3  |                                                  |
| 4  |                                                  |
| 5  |                                                  |
| 6  |                                                  |
| 7  |                                                  |
| 8  |                                                  |
| 9  |                                                  |
| 10 |                                                   |
| 11 |                                                   |
| 12 |                                                   |
| 13 |                                                   |
| 14 |                                                   |
| 15 |                                                   |
| 16 |                                                   |
| 17 |                                                   |
 +-----------------------------------------------------------------------------+
+Record: QH-------------------------------------------------------------------+
|    F10=Exit      <CR> Enter Value       PgUp      PgDn      Page  3/ 0|
+-----------------------------------------------------------------------------+
```

Figure G34. QH record.

G-5.1. Flow Hydrograph--Sediment Concentration method. This combination is described in chapter 4 in the Manual. It is a variation of the flow hydrograph sediment discharge method with the difference being that the sediment discharge is input as sediment concentrations in mg/*l*, on the SC record. The screens used in this option create the TI, QH, JP, and QW/SC records. The JP screen used is that in Figure G33 and the QH record screen is that in Figure G34. The QW/SC screen is that shown in Figure G32.